uric acid artificially introduced and uric acid supposed to be produced from food in the circulation a correct one, and the argument deduced from it valid? We do not at present know enough of the transformation of uric acid into urea to enable us to give an answer; but we may safely say that if uric acid be produced from food in the circulation, it must be destroyed and pass into urea, unless sound protective influence is present. So that, unless we introduce an unauthorised conjecture, we must suppose that if urea be formed only from tissues, uric acid must have a similar origin."

I do not think I can yet offer any further light on this supposed conversion, but I would submit that these experiments, so far as they go, show: 1st. That an action on the food, which will certainly tend to increase liver action, tends also to increase uric acid and urea; 2nd. That a direct action on the liver by a drug, while it increases markedly uric acid, does not increase urea elimination. If, then, the liver be probably the seat of formation of urea, it is also, probably, the seat of formation of uric acid; but the excitation of the liver which is sufficient to increase the acid, is not sufficient to increase the urea, unless digested food be conveyed to it at the same time.

## SOME COMMON AFFECTIONS OF THE ANUS OFTEN NEGLECTED BY MEDICAL MEN AND PATIENTS.*

By A. S. MYRTLE, M.D., Harrogate.

Nothing has impressed me so forcibly with the importance of a close investigation, even to minute, sometimes disagreeable details, regarding the condition of every case coming before us, than the fact that I have, in a very great number of instances, been consulted by patients who have suffered for months and years from affections of the anus; and neither they, their medical men, nor consultants even, have been aware of the nature of the mischief or its extent. Patients are to blame for this oversight as much as their attendants. They are often very reticent: women especially dislike to speak of symptoms, however distressing, occurring daily, or at least after each defæcation; and even men in like condition seem ashamed to own that there is anything wrong with them. We, at all events some of us, are cursed with an excess of modesty, or, because the part is not the most savoury, are disposed to fight shy of it; or we attach too little importance to the patient's statements, and fail to make a physical examination.

Moreover, whilst every week's publications are rich in literature upon uterine displacements and ovarian growths, anal difficulties seldom find a place, although I believe that the latter are infinitely more frequent than, and of equal importance with, the former.

The commonest affection is itching; pruritus ani, I dare say, is so common, that every one of us has had some personal experience of the nuisance, but few know what a terrible thing it becomes when it obtains a firm hold of one; the agony then is something maddening. The causes are carelessness in cleansing the part, acrid discharge from mucous follicles, irritation from reflex action, the presence of certain eruptions, and functional derangement of the peripheral nerve-filaments, all requiring special treatment for the successful removal of this intolerable evil. When it has existed for long periods, the mucous membrane, from scratching and the action of remedies, becomes thick, hard, and corrugated; then nothing will afford a cure but removal of the whole affected skin and mucous membrane by the knife. I had a case of this kind, in a young lady, whose life had become a burden to her on account of the itching, where Mr. Jessop dissected away all the hardened hypertrophied part with the most complete success. To show the alarming symptoms which may arise from pruritus ani, I shall relate one case which came before my notice in March last. An Indian merchant was found in his office in London on his back in a death-like faint; he remained so for about half an hour. When he came to himself, he complained of giddiness, and loss of memory and brain-power; he could not understand the purport of certain business letters, and had to give up work for the day. These attacks became rather frequent; and, becoming alarmed, he consulted me. He was quite well, he said; everything was natural. On cross-examination, I found that there was something wrong with the anus, and I examined it; there was a ring of chronic eczema, and the itching was so fearful, that, when a fit of it came on, the dread and agony were so great, that they induced the serious functional derangement of nerve-centres I have just described; this one local ailment was making life very bitter, and causing him to fear that he was suffering from serious disease of the brain. The eczema yielded to treatment, and in three weeks a cure was effected.

Fissure is of much more common occurrence than any one would believe; and it is found in the most unlikely subjects, delicate young ladies leading the most regular lives, and jolly middle-aged fellows not quite so regular in their habits; it is very frequently overlooked. In 1878, I had ten cases among visitor-patients, every one being ignorant of the nature of the local affection. Mr. Teale operated on the whole of these successfully. I shall only give one case. A young lady, the subject of general debility from anæmia, was sent to Harrogate for treatment. She was very tall, very spare and feeble, and complained of various neurotic pains, and of great mental depression, as well as physical. After seeing her two or three times, I was struck with the pinched suffering look she had; and at that visit I went more thoroughly into her case. I learned that she had a dread of going to the closet; that, after she passed a motion, she had to lie down flat on her back from a sense of pain and faintness; this occurred with every motion, and had been in existence for over eighteen months. I diagnosed fissure. She was operated on; and the third morning, to her amazement and joy, she passed a tolerably formed motion without discomfort; after that she rapidly recovered, neuralgia, anæmia, low spirits, all vanished, and now she is in perfect health. I believe that, in cases like this, the constant fear of what must be endured has the most injurious influence on all the functions of the body.

In August 1881, a lady aged 60 was sent to me on account of irritability of the mucous membrane of the bowels. She suffered from diarrhœa, alternating with constipation, flatulence, and dyspepsia. She had been under her own medical man for nearly two years, and during the last six months she had been seen by a celebrated physician once a fortnight. Something about the old lady made me ask her about the condition of the lower bowel, and this led to an examination. I found two small piles, an ulcer, and fissure. I at once sent for Mr. Wheelhouse, who came the same day, operated, and at the end of a week my patient left me quite well and hearty. I heard of her last season: she had never required a dose of medicine since the operation. Wherever there is a fissure there is spasmodic stricture, so that stretching is necessary as well as division.

With hæmorrhoids I need not take up your time, although they deserve much more attention than they receive. Patients who suffer from them, who are constantly losing blood, are too often put off with the remark, "Never mind, bleeding piles are safe. Do not interfere with them, and do not be operated on; take a spoonful of electuary at bed-time." And so the patient goes on thinking that, were this safety-valve closed, the roof of his head would be blown off, or he would have a fit. Now I do not hesitate to say this is bad advice. I have met with cases where the most grave symptoms have developed under these circumstances. Last year I had a young Austrian whose life was nearly lost in this way. He had consulted several German surgeons and physicians, without one going into his case. He was a keen sportsman, and fond of going out with his gun after big game. Sometimes he would lose so much blood as to be so weakened he could not reach his camping ground for a considerable time. A friend and patient of mine met him on one of his hunting tours, and, learning something about his symptoms, never allowed him to rest till he brought him here. On examining him, I found him suffering from an enormous cluster of piles, ulcerated and offensive; the least touch caused hæmorrhage; I allowed him two days' rest. After that Mr. Teale removed the mass. The operation was a very tedious one, but in a fortnight the patient was quite well.

The last affection I shall mention is not quite so painful, is purely neurotic in its nature, and very fitful in its attacks, coming on at long intervals, and when the subject of it is apparently in the best form; he will go to bed perfectly well, and awake at any hour with a gnawing, grinding pain in the sphincter. This gradually increases in intensity, acquires its maximum in a few minutes (which seem very long), and then gradually goes off without treatment; the patient feels very faint and exhausted, and is held down by the commanding nature of this pain. This is a form of neuralgia, produced by exposure to cold, either from the bedclothes getting off the part, or being too scanty or insufficient to protect it. During the day it may arise from sitting on a cold seat. However or whenever caused, it is at once relieved by the application of warmth. I have never seen any signs of local mischief in these cases, and I know one gentleman who has suffered from repeated and severe attacks during the last forty years. It was he who directed my attention to heat as the best remedy. One severe frosty morning, he was seized with

* Read before the Yorkshire Branch.

the worst attack he ever had, just on entering a first-class railway carriage; there was no other passenger, and, in despair, he sat down on the hot tin. In an instant, the pain was gone; and since then, when attacked, he flies to the fire and toasts himself, or applies an India-rubber bag full of hot water, with the best results.

In conclusion, let me point to the fact that, in all these and similar cases, medical treatment is worthless; and that the surgeon alone can effect a speedy and radical cure. I would, therefore, impress on our teachers of surgery the necessity of showing their class-pupils how to deal with common affections of the anus. The young practitioner too frequently begins his professional career with a competent knowledge of operations he may never be required to perform, and in total ignorance how to proceed in dealing with the simplest and commonest affections requiring operative skill.

## ON THE FEEDING OF INFANTS DEPRIVED OF BREAST-MILK.

By GEORGE CRICHTON, M.B.Edin., Twickenham.

THE question of the feeding of infants is not settled by the simple formula of "milk and water" in certain proportions, or "milk and lime-water." It is a rule, not absolute, but of expediency. Cows' milk is not the best obtainable substitute for the sustenance generally provided by Nature. Asses' milk is acknowledged to be superior. Nevertheless, being universally obtainable, cows' milk will always form the important factor in any general rule on this subject of infant-feeding. But suppose the supply of this should fail? Suppose, as everyone, at least in towns, finds, cows' milk, if obtained fresh, be not of such good quality as may be desired, nor to be had in such quantity, then, I think, it must be permissible to advise the use of condensed or "Swiss" milk. It has, indeed, some advantages, *e.g.*, it turns sour less readily, and the supply is not so apt to run short. It is difficult to see why the addition of sugar only to the normal constituents in milk should make this, as has been said, less suitable than ordinary fresh milk; for cane-sugar is always added to the usual mixture of milk and water. Children of all ages can take in considerable quantities of sugar. I am of opinion that the amount of sugar in condensed milk makes no difference to a healthy child, but that, in those of inherited weakly constitution, whose digestive powers are feeble, or where even the slightest intestinal catarrh from whatever cause has arisen, it undoubtedly acts injuriously, and must be at once and entirely withdrawn. Is it not probable—at all events, it is possible—that, however carefully conducted, the process of manufacture has induced some slight change in the solid constituents, inappreciable except through the subtle alchemy of digestion? Suppose, for instance, some transposition of elements should make the casein less digestible. The various sugars have the same chemical formula, but properties varying considerably.

To return, however, to ordinary cows' milk: let us at once ask the question, Why do we add one-third or two-thirds of water? I mean, other than empirically. Because it would be too strong without, says the nurse, thinking of her brown tea-pot, as if milk were like tea, and had to be watered down to suit tender stomachs. But ought we not to give the little one the least possible trouble? and the more weakly the infant, ought not the diet to be as nourishing as we can make it? For instance, I have never found other than good from the addition of an extra teaspoonful of cream to every meal. Cream is supposed to be "rich," and is certainly indigestible in the cases of some "bilious" adults. But there are few children to whom cream is not beneficial. We do not, by the addition of so much water, come nearer to the proportions found in human milk. The quantity is too great. In fact, soon after delivery, human milk contains less water than ordinary cows' milk, in the proportion of 828 to 870. The amount of sugar, on the other hand, is greater, in the proportion of 70 to 47.7. Hence we easily see why sugar should be added. Again, the proportion of fat is 50 to about 31; therefore, cream should likewise be added. The casein, however, is in excess in cows' milk.

There can be no question as to the propriety of adding sugar and cream to cows' milk, to bring it nearer to a child's natural diet. As the composition of cows' milk varies in no particular more than in the proportion of butter it contains, doubtless, in some instances, the addition of cream may be scarcely necessary. As to casein, if we cannot easily abstract a portion of it, by the addition of water we may make it fall into a proper proportion, and accommodate itself to a suitable percentage. In such manner, we indeed get a tolerable substitute for mother's milk: one that is found to answer fairly well. It may be that the somewhat excessive amount of sugar usually added makes up for the neglect in adding cream, both being heat-producers in the animal economy.

We have now approximated to the ideal milk. But, on account of the behaviour of the casein of cows' milk, practical experience obliges us to further water the milk. Our fine percentages are thus rather ruthlessly shaken.

Some months ago, I was summoned late in the evening to an infant five months old. It was in a condition almost of collapse, pale, with sunken eyes, and greatly depressed fontanelle. It had been fed since three months old with Swiss milk; the last week, with cows' milk diluted. It was sinking from diarrhœa. An injection *per rectum* of a few drops of laudanum checked the diarrhœa to some extent. Wine whey in teaspoonfuls frequently administered (it was unable through weakness to suck) revived it. This diet was continued for twenty-four hours, and the injection was repeated. Subsequently it was fed on equal parts of whey and bread jelly (white decoction of Sydenham), with a teaspoonful of cream in each meal. It recovered on this diet, and nearly regained infantile plumpness, suffering, however, occasional relapses of diarrhœa. Medicines did only some good, apparently answering fairly for three or four days, and then failing to have any effect. I found, as Dr. Eustace Smith points out, that changes of the drugs employed, or of the form in which administered, were effective. Opium, in various forms, and bismuth seemed most beneficial. Ultimately the diet was varied, *e.g.*, veal broth, yolk of egg, etc.

The point to which I would draw attention was the child's inability to digest milk. This was tried in the smallest proportions, alkalinised with bicarbonate of soda, with lime-water, and with barley-water. Condensed milk, which was said to have agreed with it before, was likewise tried. The common result was either a renewal of the intestinal catarrh, or else sickness. Yet everything else it took agreed. I mentioned above that it took whey and cream well, *i.e.*, de-caseinised milk.

Here, then, we have a case, not perhaps very rare, of inability to digest casein, at least, the casein found in cows' milk. Amounting almost to an idiosyncrasy, it nevertheless points very decidedly to one definite cause of infantile indigestion and consequent diarrhœa.

The comparative indigestibility of the casein of cows' milk depends upon its coagulation in one mass instead of in flakes, and the consequent difficulty—a chemical and mechanical one—of its re-solution. This occasionally happens with mothers' milk, and is apparently modified by the addition of water, lime-water, or bicarbonate of soda only (Vogel), to cows' milk.

It is apparent, from the foregoing observations, that the unsuitability of cows' milk unmixed depends upon the casein (1) as to its excessive amount; and (2) as to its rapid coagulability—so that extra stress is laid upon the delicate infantile digestive powers. It is, therefore, mainly in rectifying these two points that we may hope to obtain success. By means of a process suggested by Professor Frankland, more than twenty years ago, both these indications seem to be carried out. Many independent observers attest this, and to theirs I would add my humble opinion, drawn from closely observed cases. That the method is not in more universal use is, perhaps, to a small extent due to the want of sufficiently specific details as to its preparation. Having in this paper propounded queries, I may be permitted, in conclusion, to give (what I consider) the answer, by stating in detail how I am accustomed to have Frankland's process carried out.

In the morning, put half a pint of new milk into a convenient vessel, *e.g.*, a thin china breakfast-cup, and place it in a cool place. In the evening, skim it, preserving the cream; and into the skimmed milk put a piece of rennet an inch square, and stand the cup in a saucepan of hot water in a warm place. In from five to fifteen minutes, the milk curdles. Break up the curd with a spoon, remove the rennet (which will serve again), and pour off the whey. Boil the whey for a second, when a further curdling takes place; then strain the whey. To the quantity mentioned, add one quarter of an ounce of sugar of milk, the cream removed at the first, and one pint of new milk. The process is complete. It is generally sufficient to make it once a-day, though probably in larger quantity than we have taken for illustration. The process requires care; but, after a few trials, it is really very simple and easy. Of course, everything must be kept perfectly clean.

Some remarks are necessary on the procuring of rennet. This is not to be obtained through the ordinary channels. So-called "essence of rennet" will not do. Application must be made to the